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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,968	08/10/2001	Yoshikazu Kuroumaru	AI 211	4391

23995 7590 01/16/2004

RABIN & Berdo, PC
1101 14TH STREET, NW
SUITE 500
WASHINGTON, DC 20005

EXAMINER

VAN PELT, BRADLEY J

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,968

Applicant(s)

KUROUMARU ET AL

Examiner

Bradley J Van Pelt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-6, and 12 are rejected under 35 U.S.C. 102(a) as being anticipated by Tono (JP 2000-211531).

Tono discloses a tilt steering apparatus for a tilt adjustable steering column (12), comprising: a fixed bracket (11) fixed to a body of a vehicle, and having side a tilt bracket (23) fixed to the steering column and having side plates (23) positioned to slide along the fixed bracket at a time of tilt adjustment; a supporting shaft (14) passing through respective insertion holes of the side plates the fixed bracket and of the side plates of the tilt bracket; a lock lever (17) rotatable around an axis of said supporting shaft and in a locking direction to lock the steering column in an adjusted tilt position, and being rotatable around the axis of said supporting shaft and in a locking releasing direction; and a cam surface (18) and a cam follower which are relatively rotated while being brought into sliding contact and non rolling contact with each other as the lock lever is rotated, the cam surface including a locking position in which the steering column is locked in the adjusted tilt position, a releasing position in which the steering column is unlocked so as to be free to be adjusted to a desired tilt position, and an intermediate position disposed between the locking position and the releasing position, the intermediate position including a plurality of slopes including at least two linear and adjacent slopes (18a, 18b)

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corresponding to a rotation stroke position of the lock lever, the at least two slopes (18a, 18b) sloping upward in the same direction and being connected together at a protruding portion that projects toward the cam follower, the cam surface pressing the edge of the cam follower as the lock lever is rotated in the locking direction so that the side plates of the fixed bracket are pressed against each other, resulting in the steering column being locked at the adjusted position;

the cam follower is moved in a first direction relative to the cam surface when the lock lever is rotated in the locking direction, the at least two slopes slope upward in the first direction, a second one of the two slopes being gentler than the first slope, and the cam follower slides from the first slope of the cam surface to the second slope thereof when the lock lever is rotated in the locking direction;

the plurality of slopes of the cam surface include a third slope (18c) which slopes upward in the first direction, the third slope being gentler than the second slope, and the third slope corresponds to a rear of a stroke in a locking direction of the lock lever, and the cam follower successively slides toward the first, second and third slopes of the cam surface in this order when the lock lever is rotated in the locking direction;

means for increasing an operating torque of the lock lever at a front of a stroke in the locking releasing direction of the lock lever, the cam surface and wherein the cam follower constitute means for increasing the operating torque of the lock lever;

that an angle of inclination of the cam follower surface differs from an angle of inclination of an area, corresponding to at least the front of the stroke in the locking releasing direction of the lock lever, of the cam surface;

one of the two slopes is gentler than another of the two slopes.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tono in view of Hancock (USPN 5,377,555).

Tono discloses the cam follower includes a cam follower surface, which is brought into contact with the cam surface, and the cam follower surface includes a projection which is engaged with a rear of a stroke in the locking direction of the lock lever;

an area, corresponding to the front of the stroke in the locking releasing direction of the lock lever, of the cam surface includes a portion having no slope.

Tono does not disclose the plurality of slopes of the cam surface include an inverse slope which slopes downward in the first direction, the inverse corresponds to a rear of a stroke in the locking direction of the lock lever, and the cam follower slides toward the first and second slopes and the inverse slope of the cam surface in this order when the lock lever is rotated in the locking direction or the cam surface includes an area corresponding to a front of a stroke in the locking releasing direction of the lock lever, and a recess concaved by providing a step in the area;

Hancock shows an inverse slope and the cam surface includes an area corresponding to a front of a stroke in the locking releasing direction of the lock lever, and a recess concaved by providing a step in the area.

To modify the apparatus of Tono so as to provide and inverse slope and a concaved recess would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teachings of Hancock that such an arrangement improves the ability to lock the tilt steering mechanism.

Response to Arguments

5. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.


Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley J Van Pelt whose telephone number is (703)305-8176. The examiner can normally be reached on M-Th 7:00-4:30, 2nd F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Bucci can be reached on (703)308-3668. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-9391 for regular communications and (703)305-3597 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-2168.

bjvp


DAVID A. BUCCI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600